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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/883,512	06/18/2001	Mohamed Kamel Amara	DSU-101US	2424
31344	7590	05/06/2003		
RATNERPRESTIA P.O. BOX 1596 WILMINGTON, DE 19899			EXAMINER STOCK JR, GORDON J	
			ART UNIT 2877	PAPER NUMBER

DATE MAILED: 05/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/883,512	AMARA ET AL.
Examiner	Art Unit	
Gordon J Stock	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on \_\_\_\_.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) 3 and 13 is/are allowed.

6) Claim(s) 1,2,4-9,11,16 and 18-20 is/are rejected.

7) Claim(s) 10,12,14,15 and 17 is/are objected to.

8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 18 June 2001 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.

4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_.

5) Notice of Informal Patent Application (PTO-152)

6) Other: \_\_\_\_.

## DETAILED ACTION

### *Drawings and Specification*

1. The drawings and specification are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: X in Fig. 4. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to because in Fig. 3 the box to the right of object 38 and intersecting 35 is not identified. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Claim Objections*

3. **Claims 9 and 14** are objected to because of the following informalities: in **claim 9**, the phrase, “the sample is transmits,” should read –the sample transmits--. And in claim 14, lines 11 and 12 should have “dx” and “dy” read –d<sub>x</sub> and d<sub>y</sub>--Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. **Claims 1 and 16** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. **Claim 1** recites the limitation "said array" in line 10. There is insufficient antecedent basis for this limitation in the claim.

7. **Claim 16** recites the limitations "d<sub>1</sub>, d<sub>2</sub>" in line 10. There is insufficient antecedent basis for these limitations in the claim.

*Claim Rejections - 35 USC § 102*

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. **Claims 18 and 20** are rejected under 35 U.S.C. 102(b) as being anticipated by **Longtin** (WO 00/26665).

As for claim 18 and 20, Longtin in an apparatus for optical measurement of concentration and temperature of liquids discloses the following: radiation beam along a path; a holder adapted to hold said sample in said path at an adjustable angle relative to said sample surfaces; a radiation detector placed to receive said radiation beam after said beam has impinged on said sample; measuring means for measuring a distance between a reference point on said radiation detector and a point of impingement of said beam on said radiation detector; means for outputting an output indicative of said measured distance; the sample is a liquid in a cuvette (Figs. 1a and 1b; pages 7-11)

*Claim Rejections - 35 USC § 103*

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. **Claims 1, 2, 4/1, 4/2, 5/1, 5/2, 6/1, 6/2, 7/1, 7/2, 8/1, 8/2, 9/1, 9/2, 11/1, and 11/2** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Svendsen (5,633,708)**.

As for **claim 1**, Svendsen discloses in an apparatus for measuring refractive index the following: forming said sample with a first and second surface; forming a radiation beam and impinging said beam onto said sample at a first incidence angle relative to an axis perpendicular to said first surface; reflecting said impinged radiation from said first and second surfaces of said sample forming a first and second reflected radiation beam; impinging said first and second reflected radiation beams on a detection device; measuring a distance on said detection device between an impingement point of said first reflected beam and an impingement point of said second reflected radiation beam; altering said first incidence angle to a second incident angle and again measuring a distance between an impingement point of a third reflected beam and an impingement point of a fourth reflected beam; and obtaining the sample thickness and sample index of refraction from the equation (i) (Figs. 1-3; col. 4, lines 35-67; col. 5, lines 1-60).

Svendsen's equation (i) differs from the applicant's equation by incorporating another index of refraction into the equation. However, it is well known that the index of refraction of air is approximately 1.0. Therefore, it would be obvious to one skilled in the art at the time the invention was made that Svendsen's equation equals the equation stated by applicant for the index of refraction of air is approximately 1.0.

As for **claim 2**, Svendsen discloses the following: reflecting a radiation beam at a first incident angle onto a sample having a first and second parallel surface reflective surfaces and

projecting a first surface reflected radiation beam and a second surface reflected radiation beam onto a detection device, altering said incidence angle to a second incidence angle and measuring a second distance between said projected reflection beams onto said detection device and solving the equation (i) with two differing distances and angles of incidence to obtain thickness and index of refraction. (Figs. 1-3; col. 4, lines 35-67; col. 5, lines 1-60). Svendsen's equation (i) differs from the applicant's equation by incorporating another index of refraction into the equation. However, it is well known that the index of refraction of air is approximately 1.0. Therefore, it would be obvious to one skilled in the art at the time the invention was made that Svendsen's equation equals the equation stated by applicant for the index of refraction of air is approximately 1.0.

As for **claims 4/1 and 4/2**, Svendsen discloses everything as above (see **claims 1 and 2**). In addition, Svendsen discloses a photodetector (col. 3, lines 10-15).

As for **claims 5/1 and 5/2**, Svendsen discloses everything as above (see **claims 1 and 2**). However, Svendsen is silent concerning the angles being greater than ten degrees. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the angles greater than ten degrees, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

As for **claims 6/1 and 6/2**, Svendsen discloses everything as above (see **claims 1 and 2**). In addition, Svendsen discloses monochromatic radiation (col. 2, lines 22-40).

As for **claims 7/1 and 7/2**, Svendsen discloses everything as above (see **claims 1 and 2**). In addition, Svendsen discloses collimated radiation (col. 4, lines 35-40).

As for **claims 8/1 and 8/2**, Svendsen discloses everything as above (see **claims 1 and 2**).

In addition, Svendsen discloses the radiation is a laser beam (col. 4, lines 35-40).

As for **claims 9/1 and 9/2**, Svendsen discloses everything as above (see **claims 1 and 2**).

In addition, Svendsen discloses the sample transmits a portion of the radiation beam (Fig. 3).

As for **claims 11/1 and 11/2**, Svendsen discloses everything as above (see **claims 1 and 2**). In addition, Svendsen discloses the sample surfaces are parallel (Fig. 3).

9. **Claim 19** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Longtin (WO 00/26665)** in view of **Suda et al. (5,114,235)**.

As for **claim 19**, Longtin discloses everything as above (see claim 18). However, he does not disclose an array of sensors. Suda in a method of detecting positional deviation teaches that the sensor for detecting position may comprise a CCD array or a position sensor (col. 4, lines 10-15). Therefore, it would be obvious to one skilled in the art at the time the invention was made to have the sensor be substituted for a CCD array for a CCD array and a position sensor have been found to be functional equivalents.

*Allowable Subject Matter*

12. **Claims 3, 4/3-8/3, 10/3, 11/3, 13 and 15/13** are allowed.

13. **Claims 10/1, 10/2, 12/1, 12/2, and 17** objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and rewritten to overcome any objections or 35 USC 112 2<sup>nd</sup> paragraph rejections.

14. **Claims 9/3, 14, and 15/14** would be allowable if rewritten to overcome the objections as stated above for **claims 9 and 14** and to include all of the limitations of the base claim and any intervening claims.

15. **Claims 16/13 and 16/14** would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph and to overcome the objections as stated for **claim 14**, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

16. As to **claim 3**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method for the simultaneous determination of a sample thickness and index of refraction the particular steps a-c, in combination with the rest of the limitations of **claims 3, 4/3-11/3.**

As to **claims 10/1 and 10/2**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method for the simultaneous determination of a sample thickness and index of refraction the limitation, "the sample is a liquid in a cuvette," in combination with the rest of the limitations of **claims 10/1 and 10/2.**

As to **claims 12/1 and 12/2**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method for the simultaneous determination of a sample thickness and index of refraction the limitation, "the radiation beam is polarized," in combination with the rest of the limitations of **claims 12/1 and 12/2.**

As to **claim 13**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method for the simultaneous determination of a sample thickness and index

of refraction the particular steps c-e, in combination with the rest of the limitations of **claims 13, 15/13, 16/13, and 17.**

As to **claim 14**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method for the simultaneous determination of a sample thickness and index of refraction the particular steps c and d, in combination with the rest of the limitations of **claims 14, 15/14, 16/14 and 17.**

### *Conclusion*

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

U.S. Patent 6,172,752 to Haruna et al.

U.S. Patent 6,549,291 to Dieter et al.

### *Fax/Telephone Numbers*

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

- 1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet; and
- 2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

*Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: (703) 308-7722*

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (703) 305-4787. The examiner can normally be reached on Monday-Friday, 10:00 a.m. - 6:30 p.m.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

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gs  
May 2, 2003



Zandra V. Smith  
Primary Examiner  
Art Unit 2877